

ABSTRACT OF JP 02000001792

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**DOCUMENT-  
IDENTIFIER:** JP 2000001792 A  
**TITLE:** METHOD FOR WET-ETCHING PYRAMIDAL STRUCTURE ON SURFACE OF SILICON AND ETCHING SOLUTION  
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**INVENTOR-INFORMATION:**

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**INT-CL (IPC):** C23 F 001/32 , H01 L 021/306

**ABSTRACT:**

**PROBLEM TO BE SOLVED:** To form a uniform and small pyramidal structure with high reproducibility by subjecting the surface of silicon to wet etching by using a soln. contg. water, an alkaline reagent and an aq. soln. of isopropanol and alkaline ethylene glycol.

**SOLUTION:** The surface of silicon in the (100) orientation is subjected to wet etching by using an etching soln. at least simultaneously contg. water, an alkaline reagent such as NaOH, KOH and an aq. soln. of isopropanol and alkaline ethylene glycol and furthermore mixed with a silicate according to necessity. The content of isopropanol is controlled to 0.5 to 5 vol.% and is made higher than the ratio of ethylene glycol, and the highest ratio thereof is preferably controlled to 1:1. This etching is executed preferably with 60 to 80°C etching soln. temp. and for 5 to 20 min etching time. In this way, a pyramidal structure having dimensions of about  $\leq 2 \mu\text{m}$  is formed to reduce the reflection of incident light and to increase the intensity of absorption light.